

# SEQUENCE LISTING

<110> Sundelin, Johan  
Scarborough, Robert M.

<120> Recombinant C140 Receptor, Its Agonists and Antagonists, and  
Nucleic Acids Encoding the Receptor

<130> 44481-5006-09-US

<140> US 10/127,691  
<141> 2002-04-23

<150> US 08/097,938  
<151> 1993-07-26

<150> US 08/390,301  
<151> 1995-01-25

<150> US 08/474,414  
<151> 1995-06-07

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<170> PatentIn Ver. 2.1

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 Ser Leu Ala Ile Trp Leu Leu Ile Phe Leu Val Thr Ile Pro Leu Tyr  
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 Val Met Lys Gln Thr Ile Tyr Ile Pro Ala Leu Asn Ile Thr Thr Cys  
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 Asp Glu His Ser Glu Lys Lys Arg Gln Arg Ala Ile Arg Leu Ile Ile  
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 Ile Asp Pro Phe Val Tyr Tyr Phe Val Ser Lys Asp Phe Arg Asp His  
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 Ala Arg Asn Ala Leu Leu Cys Arg Ser Val Arg Thr Val Asn Arg Met  
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Val Ile Val Asn Pro Met Gly His Ser Arg Lys Lys Ala Asn Ile Ala  
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Pro Leu Tyr Val Val Lys Gln Thr Ile Phe Ile Pro Ala Leu Asn Ile  
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260 265 270  
Ser Ala Met Asp Glu Asn Ser Glu Lys Lys Arg Lys Arg Ala Ile Lys  
275 280 285  
Leu Ile Val Thr Val Leu Ala Met Tyr Leu Ile Cys Phe Thr Pro Ser  
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Asn Leu Leu Leu Val Val His Tyr Phe Leu Ile Lys Ser Gln Gly Gln  
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 Ser His Val Tyr Ala Leu Tyr Ile Val Ala Leu Cys Leu Ser Thr Leu  
 325 330 335  
 Asn Ser Cys Ile Asp Pro Phe Val Tyr Tyr Phe Val Ser His Asp Phe  
 340 345 350  
 Arg Asp His Ala Lys Asn Ala Leu Leu Cys Arg Ser Val Arg Thr Val  
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 Ser Ser Tyr Ser Ser Ser Ser Thr Thr Val Lys Thr Ser Tyr  
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Gly Arg Ser Leu Ile Gly Arg Leu Glu Thr Gln Pro Pro Ile Thr Gly  
 35 40 45

Lys Gly Val Pro Val Glu Pro Gly Phe Ser Ile Asp Glu Phe Ser Ala  
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Ser Ile Leu Thr Gly Lys Leu Thr Thr Val Phe Leu Pro Val Val Tyr  
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Ile Ile Val Phe Val Ile Gly Leu Pro Ser Asn Gly Met Ala Leu Trp  
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Ile Phe Leu Phe Arg Thr Lys Lys Lys His Pro Ala Val Ile Tyr Met  
 100 105 110

Ala Asn Leu Ala Leu Ala Asp Leu Leu Ser Val Ile Trp Phe Pro Leu  
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Lys Ile Ser Tyr His Leu His Gly Asn Asn Trp Val Tyr Gly Glu Ala  
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Leu Cys Lys Val Leu Ile Gly Phe Phe Tyr Gly Asn Met Tyr Cys Ser  
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Ile Leu Phe Met Thr Cys Leu Ser Val Gln Arg Tyr Trp Val Ile Val  
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 Val Met Lys Gln Thr Ile Tyr Ile Pro Ala Leu Asn Ile Thr Thr Cys  
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 His Asp Val Leu Pro Glu Glu Val Leu Val Gly Asp Met Phe Asn Tyr  
 225 230 235 240  
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 Ala Ser Ala Tyr Val Leu Met Ile Lys Thr Leu Arg Ser Ser Ala Met  
 260 265 270  
 Asp Glu His Ser Glu Lys Lys Arg Gln Arg Ala Ile Arg Leu Ile Ile  
 275 280 285  
 Thr Val Leu Ala Met Tyr Phe Ile Cys Phe Ala Pro Ser Asn Leu Leu  
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 Leu Val Val His Tyr Phe Leu Ile Lys Thr Gln Arg Gln Ser His Val  
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 Tyr Ala Leu Tyr Leu Val Ala Leu Cys Leu Ser Thr Leu Asn Ser Cys  
 325 330 335  
 Ile Asp Pro Phe Val Tyr Tyr Phe Val Ser Lys Asp Phe Arg Asp His  
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 Ala Arg Asn Ala Leu Leu Cys Arg Ser Val Arg Thr Val Asn Arg Met  
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 Ala Leu Trp Val Phe Leu Phe Arg Thr Lys Lys Lys His Pro Ala Val  
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 305 310 315 320  
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Arg Asp His Ala Lys Asn Ala Leu Leu Cys Arg Ser Val Arg Thr Val  
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 35 40 45

Asn Asp Lys Tyr Glu Pro Phe Trp Glu Asp Glu Glu Lys Asn Glu Ser  
 50 55 60

Gly Leu Thr Glu Tyr Arg Leu Val Ser Ile Asn Lys Ser Ser Pro Leu  
 65 70 75 80

Gln Lys Gln Leu Pro Ala Phe Ile Ser Glu Asp Ala Ser Gly Tyr Leu  
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Thr Ser Ser Trp Leu Thr Leu Phe Val Pro Ser Val Tyr Thr Gly Val  
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Phe Val Val Ser Leu Pro Leu Asn Ile Met Ala Ile Val Val Phe Ile  
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Leu Lys Met Lys Val Lys Lys Pro Ala Val Val Tyr Met Leu His Leu  
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Tyr Tyr Phe Ser Gly Ser Asp Trp Gln Phe Gly Ser Glu Leu Cys Arg  
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 Cys Tyr Val Ser Ile Ile Arg Cys Leu Ser Ser Ser Ala Val Ala Asn  
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 <223> Xaa at position 1 = 3-mercaptopropionic acid; Xaa  
           at position 2 = cyclohexylalanine  
  
 <400> 11  
 Xaa Xaa Leu Lys Gly  
   1                  5  
  
 <210> 12

<211> 5  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor antagonist  
  
 <220>  
 <221> VARIANT  
 <222> (1)..(2)  
 <223> Xaa at position 1 = 3-mercaptopropionic acid; Xaa at position 2 = cyclohexylalanine  
  
 <400> 12  
 Xaa Xaa Ile Gly Arg  
   1                  5  
  
  
 <210> 13  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor antagonist  
  
 <220>  
 <221> VARIANT  
 <222> (1)  
 <223> Xaa at position 1 = 3-mercaptopropionic acid  
  
 <400> 13  
 Xaa Leu Leu Gly Lys Lys  
   1                  5  
  
  
 <210> 14  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor antagonist  
  
 <220>  
 <221> VARIANT  
 <222> (1)  
 <223> Xaa at position 1 = 3-mercaptopropionic acid  
  
 <400> 14  
 Xaa Leu Ile Gly Arg Lys  
   1                  5  
  
  
 <210> 15  
 <211> 10

<212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor antagonist  
  
 <220>  
 <221> VARIANT  
 <222> (1)  
 <223> Xaa at position 1 = 3-mercaptopropionic acid  
  
 <400> 15  
 Xaa Leu Ile Gly Arg Lys Glu Thr Gln Pro  
       1                  5                  10  
  
 <210> 16  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor antagonist  
  
 <220>  
 <221> VARIANT  
 <222> (1)  
 <223> Xaa at position 1 = 3-mercaptopropionic acid  
  
 <400> 16  
 Xaa Leu Leu Gly Lys Lys Asp Gly Thr Ser  
       1                  5                  10  
  
 <210> 17  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor antagonist  
  
 <220>  
 <221> VARIANT  
 <222> (1)  
 <223> Xaa at position 1 = (n-pentyl) 2-N-Leu  
  
 <400> 17  
 Xaa Ile Gly Arg Lys  
       1                  5  
  
 <210> 18  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
antagonist

<220>  
<221> VARIANT  
<222> (1)  
<223> Xaa at position 1 = Me-N-(n-pentyl)

<400> 18  
Xaa Leu Ile Gly Arg Lys  
1 5

<210> 19  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist/immunogen

<400> 19  
Ser Lys Gly Arg Ser Leu Ile Gly Arg Leu Glu Thr  
1 5 10

<210> 20  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist/immunogen

<400> 20  
Ile Ser Tyr His Leu His Gly Asn Asn Trp Val Tyr Gly Glu Ala Leu  
1 5 10 15

Cys

<210> 21  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist/immunogen

<400> 21  
Gln Thr Ile Tyr Ile Pro Ala Leu Asn Ile Thr Thr Cys His Asp Val  
1 5 10 15



Leu Pro Glu Glu Val Leu Val Gly Asp Met Phe Asn Tyr Phe Leu  
20 25 30

<210> 22  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist/immunogen

<400> 22  
His Tyr Phe Leu Ile Lys Thr Gln Arg Gln Ser His Val Tyr Ala  
1 5 10 15

<210> 23  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 23  
Ser Leu Ile Gly Arg Leu  
1 5

<210> 24  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 24  
Ser Leu Ile Gly Arg Ala  
1 5

<210> 25  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 25  
Ser Leu Ile Gly Ala Leu  
1 5

<210> 26  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 26  
Ser Leu Ile Ala Arg Leu  
1 5

<210> 27  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 27  
Ser Leu Ala Gly Arg Leu  
1 5

<210> 28  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 28  
Ser Ala Ile Gly Arg Leu  
1 5

<210> 29  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 29  
Ala Leu Ile Gly Arg Leu  
1 5

<210> 30  
<211> 6

<212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
 agonist  
  
 <400> 30  
 Ser Phe Phe Leu Arg Trp  
 1 5  
  
 <210> 31  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
 agonist  
  
 <400> 31  
 Arg Asn Asn Ser Ser Lys Gly Arg  
 1 5  
  
 <210> 32  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
 agonist  
  
 <400> 32  
 Ser Leu Ile Gly Arg Leu Glu Thr Gln Pro Pro Ile Thr  
 1 5 10  
  
 <210> 33  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
 agonist  
  
 <400> 33  
 Ser Leu Ile Gly Arg Leu Glu Thr Gln Pro Pro Ile  
 1 5 10  
  
 <210> 34  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 34  
Ser Leu Ile Gly Arg Leu Glu Thr Gln Pro Pro  
1 5 10

<210> 35  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 35  
Ser Leu Ile Gly Arg Leu Glu Thr Gln Pro  
1 5 10

<210> 36  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 36  
Ser Leu Ile Gly Arg Leu Glu Thr Gln  
1 5

<210> 37  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 agonist

<400> 37  
Ser Leu Ile Gly Arg Leu Glu Thr  
1 5

<210> 38  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 38  
Ser Leu Ile Gly Arg Leu Glu  
1 5

<210> 39  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 39  
Ser Leu Ile Gly Arg Leu  
1 5

<210> 40  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 40  
Ser Leu Ile Gly Arg  
1 5

<210> 41  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 41  
Ser Leu Leu Gly Lys Val Asp Gly Thr Ser His Val Thr  
1 5 10

<210> 42  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: C140 receptor  
agonist

<400> 42  
Ser Leu Leu Gly Lys Val Asp Gly Thr Ser His Val  
1 5 10

<210> 43  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <400> 43  
 Ser Leu Leu Gly Lys Val Asp Gly Thr Ser His  
   1                  5                 10  
  
 <210> 44  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <400> 44  
 Ser Leu Leu Gly Lys Val Asp Gly Thr Ser  
   1                  5                 10  
  
 <210> 45  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <400> 45  
 Ser Leu Leu Gly Lys Val Asp Gly Thr  
   1                  5  
  
 <210> 46  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <400> 46  
 Ser Leu Leu Gly Lys Val Asp Gly  
   1                  5  
  
 <210> 47

<211> 7  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <400> 47  
 Ser Leu Leu Gly Lys Val Asp  
   1                  5  
  
  
 <210> 48  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <400> 48  
 Ser Leu Leu Gly Lys Val  
   1                  5  
  
  
 <210> 49  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <400> 49  
 Ser Leu Leu Gly Lys  
   1                  5  
  
  
 <210> 50  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <220>  
 <221> VARIANT  
 <222> (2)  
 <223> Xaa at position 2 = cyclohexylalanine (Cha)  
  
 <400> 50  
 Ser Xaa Ile Gly Arg  
   1                  5

<210> 51  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
           agonist  
  
 <220>  
 <221> VARIANT  
 <222> (2)  
 <223> Xaa at position 2 = cyclohexylalanine (Cha)  
  
 <400> 51  
 Ser Xaa Leu Gly Lys  
   1                  5  
  
  
 <210> 52  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
           agonist  
  
 <220>  
 <221> VARIANT  
 <222> (1)  
 <223> Xaa at position 1 = 2,3-diamino propionic acid  
           (2,3-diaP)  
  
 <400> 52  
 Xaa Ile Gly Arg  
   1  
  
  
 <210> 53  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
           agonist  
  
 <220>  
 <221> VARIANT  
 <222> (1)  
 <223> Xaa at position 1 = 2,3-diamino propionic acid  
           (2,3-diaP)  
  
 <400> 53  
 Xaa Leu Leu Gly Lys  
   1                  5



<210> 54  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <400> 54  
 Ser Leu Leu Gly Lys Arg  
   1                  5  
  
 <210> 55  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <400> 55  
 Ser Leu Ile Gly Arg Arg  
   1                  5  
  
 <210> 56  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 receptor  
          agonist  
  
 <220>  
 <221> VARIANT  
 <222> (2)  
 <223> Xaa at position 2= cyclohexylalanine (Cha)  
  
 <400> 56  
 Ser Xaa Leu Gly Lys Lys  
   1                  5  
  
 <210> 57  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: C140 agonist  
          receptor  
  
 <220>  
 <221> VARIANT

<222> (2)  
 <223> Xaa at position 2 = cyclohexylalanine (Cha)

<400> 57  
 Ser Xaa Ile Gly Arg Lys  
 1 5

<210> 58  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: C140 receptor agonist

<220>  
 <221> VARIANT  
 <222> (1)  
 <223> Xaa at position 1 = 2,3-diamino propionic acid (2,3-diaP)

<400> 58  
 Xaa Leu Ile Gly Arg Lys  
 1 5

<210> 59  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: C140 receptor agonist

<220>  
 <221> VARIANT  
 <222> (1)  
 <223> Xaa at position 1 = 2,3-diamino propionic acid (2,3-diaP)

<400> 59  
 Xaa Leu Leu Gly Lys Lys  
 1 5

<210> 60  
 <211> 2732  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (73) .. (1269)  
 <223> C140 receptor, cDNA and deduced protein sequences

<400> 60

ccctgtgctc agagtagggc tccgagtttc gaaccactgg tggcggattg cccgcccgcc 60

ccacgtccgg gg atg cga agt ctc agc ctg gcg tgg ctg ctg gga ggt atc 111  
Met Arg Ser Leu Ser Leu Ala Trp Leu Leu Gly Gly Ile  
1 5 10

acc ctt ctg gcg gcc tgc gtc tcc tgc agc cgg acc gag aac ctt gca 159  
Thr Leu Leu Ala Ala Ser Val Ser Cys Ser Arg Thr Glu Asn Leu Ala  
15 20 25

ccg gga [cgc aac aac agt aaa gga aga] agt ctt att ggc aga tta gaa 207  
Pro Gly [Arg Asn Asn Ser Lys Gly Arg] Ser Leu Ile Gly Arg Leu Glu  
30 35 40 45

acc cag cct cca atc act ggg aaa ggg gtt ccg gta gaa cca ggc ttt 255  
Thr Gln Pro Pro Ile Thr Gly Lys Gly Val Pro Val Glu Pro Gly Phe  
50 55 60

tcc atc gat gag ttc tct gcg tcc atc ctc acc ggg aag ctg acc acg 303  
Ser Ile Asp Glu Phe Ser Ala Ser Ile Leu Thr Gly Lys Leu Thr Thr  
65 70 75

gtc ttt ctt ccg gtc gtc tac att att gtg ttt gtg att ggt ttg ccc 351  
Val Phe Leu Pro Val Val Tyr Ile Ile Val Phe Val Ile Gly Leu Pro  
80 85 90

agt aat ggc atg gcc ctc tgg atc ttc ctt ttc cga acg aag aag aaa 399  
Ser Asn Gly Met Ala Leu Trp Ile Phe Leu Phe Arg Thr Lys Lys Lys  
95 100 105

cac ccc gcc gtg att tac atg gcc aac ctg gcc ttg gcc gac ctc ctc 447  
His Pro Ala Val Ile Tyr Met Ala Asn Leu Ala Leu Ala Asp Leu Leu  
110 115 120 125

tct gtc atc tgg ttc ccc ctg aag atc tcc tac cac cta cat ggc aac 495  
Ser Val Ile Trp Phe Pro Leu Lys Ile Ser Tyr His Leu His Gly Asn  
130 135 140

aac tgg gtc tac ggg gag gcc ctg tgc aag gtg ctc att ggc ttt ttc 543  
Asn Trp Val Tyr Gly Glu Ala Leu Cys Lys Val Leu Ile Gly Phe Phe  
145 150 155

tat ggt aac atg tat tgc tcc atc ctc ttc atg acc tgc ctc agc gtg 591  
Tyr Gly Asn Met Tyr Cys Ser Ile Leu Phe Met Thr Cys Leu Ser Val  
160 165 170

cag agg tac tgg gtg atc gtg aac ccc atg gga cac ccc agg aag aag 639  
Gln Arg Tyr Trp Val Ile Val Asn Pro Met Gly His Pro Arg Lys Lys  
175 180 185

gca aac atc gcc gtt ggc gtc tcc ttg gca atc tgg ctc ctg att ttt 687  
Ala Asn Ile Ala Val Gly Val Ser Leu Ala Ile Trp Leu Leu Ile Phe  
190 195 200 205

ctg gtc acc atc cct ttg tat gtc atg aag cag acc atc tac att cca 735  
Leu Val Thr Ile Pro Leu Tyr Val Met Lys Gln Thr Ile Tyr Ile Pro  
210 215 220

gca ttg aac atc acc acc tgt cac gat gtg ctg cct gag gag gta ttg 783

Ala Leu Asn Ile Thr Thr Cys His Asp Val Leu Pro Glu Glu Val Leu  
225 230 235

gtg ggg gac atg ttc aat tac ttc ctc tca ctg gcc att gga gtc ttc 831  
Val Gly Asp Met Phe Asn Tyr Phe Leu Ser Leu Ala Ile Gly Val Phe  
240 245 250

ctg ttc ccg gcc ctc ctt act gca tct gcc tac gtg ctc atg atc aag 879  
Leu Phe Pro Ala Leu Leu Thr Ala Ser Ala Tyr Val Leu Met Ile Lys  
255 260 265

acg ctc cgc tct tct gct atg gat gaa cac tca gag aag aaa agg cag 927  
Thr Leu Arg Ser Ser Ala Met Asp Glu His Ser Glu Lys Lys Arg Gln  
270 275 280 285

agg gct atc cga ctc atc atc acc gtg ctg gcc atg tac ttc atc tgc 975  
Arg Ala Ile Arg Leu Ile Ile Thr Val Leu Ala Met Tyr Phe Ile Cys  
290 295 300

ttt gct cct agc aac ctt ctg ctc gta gtg cat tat ttc cta atc aaa 1023  
Phe Ala Pro Ser Asn Leu Leu Leu Val Val His Tyr Phe Leu Ile Lys  
305 310 315

acc cag agg cag agc cac gtc tac gcc ctc tac ctt gtc gcc ctc tgc 1071  
Thr Gln Arg Gln Ser His Val Tyr Ala Leu Tyr Leu Val Ala Leu Cys  
320 325 330

ctg tcg acc ctc aac agc tgc ata gac ccc ttt gtc tat tac ttt gtc 1119  
Leu Ser Thr Leu Asn Ser Cys Ile Asp Pro Phe Val Tyr Tyr Phe Val  
335 340 345

tca aaa gat ttc agg gat cac gcc aga aac gcg ctc ctc tgc cga agt 1167  
Ser Lys Asp Phe Arg Asp His Ala Arg Asn Ala Leu Leu Cys Arg Ser  
350 355 360 365

gtc cgc act gtg aat cgc atg caa atc tcg ctc agc tcc aac aag ttc 1215  
Val Arg Thr Val Asn Arg Met Gln Ile Ser Leu Ser Ser Asn Lys Phe  
370 375 380

tcc agg aag tcc ggc tcc tac tct tca agc tca acc agt gtt aaa acc 1263  
Ser Arg Lys Ser Gly Ser Tyr Ser Ser Ser Ser Thr Ser Val Lys Thr  
385 390 395

tcc tac tgagctgtac ctgaggatgt caagcctgct tgatgatgat gatgatgatg 1319  
Ser Tyr

gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt gtgtgtgtgt gcacccgtgt gtgagtgcgt 1379

ggtagggata caccaacatg gatggggctg tcatttccta tccaagctgt ctgtctctgc 1439

accaatcaca agcatgcagc tctccccagg attgacagaa gcctcctcct ttgcatgaga 1499

acagtcttcc actctgatga aaagcatcag tatcagaaac tgaaacgaac tgagaggagc 1559

ttgttttgtg aaagtgaaga gaagatggag ggtcagtgac ttgcaaaaaa aaccaaccaa 1619

acaaaaacta cacctggcaa gaaggctaag actctctgaa atgcttcctt tttccatctg 1679

gagttcgtct cggccttggt caggacctga ggccctggta gagcttcagt ccagttgatt 1739

gactttacag acttgagaga ggagtgaatg aggagtgaat gaggctcctg gcggcatcct 1799  
aaccggctaa cagtggcctt gctggacaat aggattcaga tggctggagt tacattctca 1859  
caccatttca tcagaactat tggggatctt gatcaatgtg caggctccctt agcgtcagta 1919  
accctgggag ctcagacacg atgggggtga ggggtgggggt ggggggtgggg gtgaggctct 1979  
acaaacctta gtgatgactg cagacacaga accatggagc tgagcctgct tctgcttgcc 2039  
agggcaccac tgtaatgttg gcaaagaaaa accaacagca gtgttttgag cctctttttt 2099  
tggtcagttt atgatgaatt tgcctattgg tttattggga ttttcagttc ctttattact 2159  
ttgttgtaat tttgtgtgtt tattagtcaa gaaaaagaag atgaggctct taaaaatgta 2219  
aataaaattt ttgggtttttt gggttttttaa cttgggccaa ctacaaatac tgcttagggt 2279  
tttttctaac ttaattgtta actacatcat gtgaacttaa gacattttca tgataaagca 2339  
ttactgtagt gtcagttttc cctcatcctc gatcatagtc cttcccgta agcaggggccc 2399  
ttccctccc cccctttgc cgtttccctc cccaccagat agtccccctg tctgctttaa 2459  
cctaccagtt agtattttat aaaaacagat cattggaata tttattatca gttttgttca 2519  
cttgttatca gttttgttca ctaatttgc caataatgga attaacgtct tctcatctgt 2579  
ttgaggaaga tctgaaacaa ggggccattg caggagtaca tggctccagg cttactttat 2639  
atactgctg tatttggtggc tttaaaaaaa tgaccttggt atatgaatgc tttataaata 2699  
aataatgcat gaactttaaa aaaaaaaaaa aaa 2732

<210> 61

<211> 399

<212> PRT

<213> Mus musculus

<400> 61

Met Arg Ser Leu Ser Leu Ala Trp Leu Leu Gly Gly Ile Thr Leu Leu  
1 5 10 15

Ala Ala Ser Val Ser Cys Ser Arg Thr Glu Asn Leu Ala Pro Gly Arg  
20 25 30

Asn Asn Ser Lys Gly Arg Ser Leu Ile Gly Arg Leu Glu Thr Gln Pro  
35 40 45

Pro Ile Thr Gly Lys Gly Val Pro Val Glu Pro Gly Phe Ser Ile Asp  
50 55 60

Glu Phe Ser Ala Ser Ile Leu Thr Gly Lys Leu Thr Thr Val Phe Leu  
65 70 75 80

Pro Val Val Tyr Ile Ile Val Phe Val Ile Gly Leu Pro Ser Asn Gly  
85 90 95

Met Ala Leu Trp Ile Phe Leu Phe Arg Thr Lys Lys Lys His Pro Ala  
 100 105 110  
 Val Ile Tyr Met Ala Asn Leu Ala Leu Ala Asp Leu Leu Ser Val Ile  
 115 120 125  
 Trp Phe Pro Leu Lys Ile Ser Tyr His Leu His Gly Asn Asn Trp Val  
 130 135 140  
 Tyr Gly Glu Ala Leu Cys Lys Val Leu Ile Gly Phe Phe Tyr Gly Asn  
 145 150 155 160  
 Met Tyr Cys Ser Ile Leu Phe Met Thr Cys Leu Ser Val Gln Arg Tyr  
 165 170 175  
 Trp Val Ile Val Asn Pro Met Gly His Pro Arg Lys Lys Ala Asn Ile  
 180 185 190  
 Ala Val Gly Val Ser Leu Ala Ile Trp Leu Leu Ile Phe Leu Val Thr  
 195 200 205  
 Ile Pro Leu Tyr Val Met Lys Gln Thr Ile Tyr Ile Pro Ala Leu Asn  
 210 215 220  
 Ile Thr Thr Cys His Asp Val Leu Pro Glu Glu Val Leu Val Gly Asp  
 225 230 235 240  
 Met Phe Asn Tyr Phe Leu Ser Leu Ala Ile Gly Val Phe Leu Phe Pro  
 245 250 255  
 Ala Leu Leu Thr Ala Ser Ala Tyr Val Leu Met Ile Lys Thr Leu Arg  
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 Ser Ser Ala Met Asp Glu His Ser Glu Lys Lys Arg Gln Arg Ala Ile  
 275 280 285  
 Arg Leu Ile Ile Thr Val Leu Ala Met Tyr Phe Ile Cys Phe Ala Pro  
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 Ser Asn Leu Leu Leu Val Val His Tyr Phe Leu Ile Lys Thr Gln Arg  
 305 310 315 320  
 Gln Ser His Val Tyr Ala Leu Tyr Leu Val Ala Leu Cys Leu Ser Thr  
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 Leu Asn Ser Cys Ile Asp Pro Phe Val Tyr Tyr Phe Val Ser Lys Asp  
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 Phe Arg Asp His Ala Arg Asn Ala Leu Leu Cys Arg Ser Val Arg Thr  
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 Pro Ser Ala Ala Trp Leu Leu Gly Ala Ala Ile Leu Leu Ala Ala Ser  
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 Leu Ser Cys Ser Gly Thr Ile Gln Gly Thr Asn Arg Ser Ser Lys Gly  
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aga agc ctt att ggt aag gtt gat ggc aca tcc cac gtc act gga aaa 202  
 Arg Ser Leu Ile Gly Lys Val Asp Gly Thr Ser His Val Thr Gly Lys  
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gga gtt aca gtt gaa aca gtc ttt tct gtg gat gag ttt tct gca tct 250  
 Gly Val Thr Val Glu Thr Val Phe Ser Val Asp Glu Phe Ser Ala Ser  
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 Val Leu Ala Gly Lys Leu Thr Thr Val Phe Leu Pro Ile Val Tyr Thr  
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 Ile Val Phe Ala Val Gly Leu Pro Ser Asn Gly Met Ala Leu Trp Val  
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ttt ctt ttc cga act aag aag aag cac cct gct gtg att tac atg gcc 394  
 Phe Leu Phe Arg Thr Lys Lys Lys His Pro Ala Val Ile Tyr Met Ala  
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 Ile Ala Tyr His Ile His Gly Asn Asn Trp Ile Tyr Gly Glu Ala Leu  
 135 140 145

tgt aat gtg ctt att ggc ttt ttc tat cgc aac atg tac tgt tcc att 538  
 Cys Asn Val Leu Ile Gly Phe Phe Tyr Gly Asn Met Tyr Cys Ser Ile  
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ctc ttc atg acc tgc ctc agt gtg cag agg tat tgg gtc atc gtg aac 586  
 Leu Phe Met Thr Cys Leu Ser Val Gln Arg Tyr Trp Val Ile Val Asn  
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ccc atg ggg cac tcc agg aag aag gca aac att gcc att ggc atc tcc 634  
Pro Met Gly His Ser Arg Lys Lys Ala Asn Ile Ala Ile Gly Ile Ser  
180 185 190 195

ctg gca ata tgg ctg ctg act ctg ctg gtc acc atc cct ttg tat gtc 682  
Leu Ala Ile Trp Leu Leu Thr Leu Leu Val Thr Ile Pro Leu Tyr Val  
200 205 210

gtg aag cag acc atc ttc att cct gcc ctg aac atc acg acc tgt cat 730  
Val Lys Gln Thr Ile Phe Ile Pro Ala Leu Asn Ile Thr Thr Cys His  
215 220 225

gat gtt ttg cct gag cag ctc ttg gtg gga gac atg ttc aat tac ttc 778  
Asp Val Leu Pro Glu Gln Leu Leu Val Gly Asp Met Phe Asn Tyr Phe  
230 235 240

ctc tct ctg gcc att ggg gtc ttt ctg ttc cca gcc ttc ctc aca gcc 826  
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245 250 255

tct gcc tat gtg ctg atg atc aga atg ctg cga tct tct gcc atg gat 874  
Ser Ala Tyr Val Leu Met Ile Arg Met Leu Arg Ser Ser Ala Met Asp  
260 265 270 275

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Glu Asn Ser Glu Lys Lys Arg Lys Arg Ala Ile Lys Leu Ile Val Thr  
280 285 290

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295 300 305

gtg gtg cat tat ttt ctg att aag agc cag ggc cag agc cat gtc tat 1018  
Val Val His Tyr Phe Leu Ile Lys Ser Gln Gly Gln Ser His Val Tyr  
310 315 320

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Ala Leu Tyr Ile Val Ala Leu Cys Leu Ser Thr Leu Asn Ser Cys Ile  
325 330 335

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Asp Pro Phe Val Tyr Tyr Phe Val Ser His Asp Phe Arg Asp His Ala  
340 345 350 355

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Lys Asn Ala Leu Leu Cys Arg Ser Val Arg Thr Val Lys Gln Met Gln  
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gta ccc ctc acc tca aag aaa cac tcc agg aaa tcc agc tct tac tct 1210  
Val Pro Leu Thr Ser Lys Lys His Ser Arg Lys Ser Ser Ser Tyr Ser  
375 380 385

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Ser Ser Ser Thr Thr Val Lys Thr Ser Tyr  
390 395

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Val	Tyr	Thr	Ile	Val	Phe	Ala	Val	Gly	Leu	Pro	Ser	Asn	Gly	Met	Ala
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Cys	Ser	Ile	Leu	Phe	Met	Thr	Cys	Leu	Ser	Val	Gln	Arg	Tyr	Trp	Val
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Ile	Val	Asn	Pro	Met	Gly	His	Ser	Arg	Lys	Lys	Ala	Asn	Ile	Ala	Ile
		180						185					190		
Gly	Ile	Ser	Leu	Ala	Ile	Trp	Leu	Leu	Thr	Leu	Leu	Val	Thr	Ile	Pro
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Thr	Cys	His	Asp	Val	Leu	Pro	Glu	Gln	Leu	Leu	Val	Gly	Asp	Met	Phe
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 Ala Met Asp Glu Asn Ser Glu Lys Lys Arg Lys Arg Ala Ile Lys Leu  
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 Asp His Ala Lys Asn Ala Leu Leu Cys Arg Ser Val Arg Thr Val Lys  
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 Gln Met Gln Val Pro Leu Thr Ser Lys Lys His Ser Arg Lys Ser Ser  
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 Ser Tyr Ser Ser Ser Ser Thr Thr Val Lys Thr Ser Tyr  
 385 390 395